

# Fix WiFi not working on Ubuntu

WiFi connection problem can be either hardware or software problem. Here are some useful solutions if users find themselves having problems connecting to WiFi networks.

Ubuntu is a powerful, free and open source operating system, suitable for beginners who want to explore Linux and seasoned professionals who want a reliable, secure system for projects. and so on. However, besides all the advantages of Ubuntu, you can sometimes have problems connecting to a WiFi network.

WiFi connection problem can be either hardware or software problem. Here are some useful solutions if users find themselves having problems connecting to WiFi networks.

**Note:** The biggest problem users will encounter is having a wireless card made by Broadcom. Although the manufacturer is part of the Linux Foundation, this doesn't mean their driver support is always good. Aside from the driver, another problem is TKIP encryption.

## Install the driver from the Ubuntu ISO

If Ubuntu doesn't detect the WiFi network at all or if it fails, then you can try installing or reinstalling the WiFi driver from the Ubuntu ISO file. First, you need to download the Ubuntu ISO corresponding to your Ubuntu version (on another device or by an Ethernet connection on Ubuntu).

Place the Ubuntu ISO in your Ubuntu **Home** folder , then in Terminal, enter the following command string to mount the Ubuntu ISO to the virtual drive:

```
sudo mkdir /media/cdrom sudo mount -o loop ubuntu-*.iso /media/cdrom
```

Go to **Software & Updates** from the control panel, then in the new window select **CDrom with Ubuntu [version] box** and enter the password when prompted.

Click the '**Additional Drivers**' tab , then select the **Wireless Network Adapter option** and click **Apply Changes**.

## Issue 1: Device not detected

If the wireless device is not detected by Ubuntu (or any distribution), then you will need to go to Terminal and enter the following command:

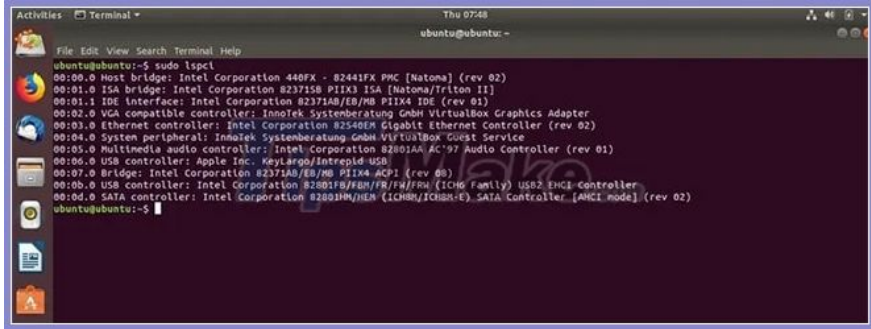
```
sudo lsusb
```

. if you use a USB wireless card / dongle and:

```
sudo lspci
```

. if you have a wireless card inside.

If the response from these commands is similar to the screenshot below, then you're in luck: Ubuntu can find the card. It is usually identified by a **Network Controller** or **Ethernet Controller**.



```
ubantu@ubuntu:~$ sudo lspci
00:00.0 Host bridge: Intel Corporation 440FX - 82441FX PMC [Natoma] (rev 02)
00:01.0 ISA bridge: Intel Corporation 82371SB PIIX3 ISA [Natoma/Triton II]
00:01.1 IDE interface: Intel Corporation 82371AB/EB/MB PIIX4 IDE (rev 01)
00:02.0 VGA compatible controller: InnoTek Systemberatung GmbH VirtualBox Graphics Adapter
00:03.0 Ethernet controller: Intel Corporation 82540EM Gigabit Ethernet Controller (rev 02)
00:04.0 System peripheral: InnoTek Systemberatung GmbH VirtualBox Guest Service
00:05.0 Multimedia audio controller: Intel Corporation 82801AA AC'97 Audio Controller (rev 01)
00:06.0 USB controller: Apple Inc. KeyLargo/Intrepid-USB
00:07.0 Bridge: Intel Corporation 82371AB/EB/MB PIIX4 ACPI (rev 00)
00:0b.0 USB controller: Intel Corporation 82801FB/FBHM/FR/FW/FRM (ICH6 Family) USB2 EHCI Controller
00:0d.0 SATA controller: Intel Corporation 82801HM/JHEM (ICH6M/ICH6R-E) SATA Controller [AHCI mode] (rev 02)
ubantu@ubuntu:~$
```

In the past, many Linux distributions had difficulty finding wireless cards. Thankfully, the support has gotten a lot better, so this is a rare case.

## Additional Commands

You can also use the following command to check if the wireless device is visible; users may need to install `lshw` first.

```
lshw -C network
```

The output looks like this:

```
*-network description: Wireless interface product: PRO/Wireless 3945ABG [Golan] I
```

If this is the case and the system finds the wireless card, you can proceed to install the driver / module as described below.

## Problem 2: Missing driver module

Following from the successful `lsusb` and `lspci` commands, giving Ubuntu the ability to see the wireless card, you can assume that the firmware is working, just that the system doesn't know what to do with the card. This is when a driver or module is needed.

Go back to Terminal and enter the following command:

```
sudo lsmod
```

```
ubuntu@ubuntu:~$ lsmod
Module                  Size  Used by
snd_intel8x0            48960  2
intel_powerclamp       16384  0
vbiovideo               36864  2
crct1001f_pclmul       16384  0
snd_ac97_codec         131072  1 snd_intel8x0
crc32_pclmul           16384  0
ghash_clmulntel        16384  0
ac97_bus                16384  1 snd_ac97_codec
pcbc                    16384  0
ttm                     186496  1 vbiovideo
aesni_intel            188416  0
snd_pcm                 98304  2 snd_ac97_codec,snd_intel8x0
aes_x86_64              78480  1 aesni_intel
drm_kms_helper         372032  1 vbiovideo
crypto_simd            16384  1 aesni_intel
snd_seq_midi            16384  0
snd_seq_midi_event     16384  1 snd_seq_midi
joydev                  24576  0
glue_helper            16384  1 aesni_intel
snd_rawmidi            32768  1 snd_seq_midi
cryptd                  24576  3 crypto_simd,ghash_clmulntel,aesni_intel
input_leds              16384  0
drm                     401408  5 vbiovideo,ttm,drm_kms_helper
```

You will see a list of used modules. To activate your module enter the following command where **modulename** is the name of your chipset.

```
sudo modprobe modulename
```

For example, if your wireless chipset is 'RT2870', the command would look like this:

```
sudo modprobe rt2800usb
```

Then, run the lsmod command again to see if it loaded correctly.

### Load the module automatically when booting

It is a rare case, but sometimes the module will not try to boot. In this case, you can force it to load permanently. Enter the following command into Terminal:

```
sudo nano /etc/modules
```

The Nano editor will open. Add your module name at the bottom and save the file. You will need to reboot and check to see if the wireless card can now see the networks to allow you to connect as usual.

If you have difficulty, repeat the process. Thankfully, Ubuntu has several helpful help pages in the online documentation that you can also read through at [here](#):

Alternatively, you can use the built-in helper feature in Terminal by typing:

```
man lsusb man lspci
```

### Issue 3: DNS

Rarely does DNS become an issue. However, you should consider it if you're still having connectivity problems. From the Terminal, enter the following command to evaluate where DNS is coming from:

```
nmcli device show wlan1 | grep IP4.DNS
```

This will show you the router's LAN address. If it doesn't work, you may have to change '**wlan1**' to whatever your wireless network uses. The following command can also be used:

```
ip address
```

After you have this information, the next method is to ping the router's LAN address. If this works, try pinging Google's DNS servers:

```
ping 8.8.8.8
```

With these results, you can determine where the DNS problem is. If all devices in the home or office have page load errors, change the router's DNS to Google or Open DNS server. You will have to consult with the router manufacturer for how to do this, but it is usually done in admin pages, the most common is to log into **192.168.0.1** or similar.

If the DNS problem is only happening with Ubuntu, then follow these steps using the Network Manager GUI:

1. Right click on **Network Manager**.
2. Select **Edit Connections**.
3. Select the WiFi connection in question.
4. Select **IPv4 Settings**.
5. Change the **Method** to **DHCP Addresses Only**.
6. Add 8.8.8.8, 8.8.4.4 to the box of DNS server. Remember to use commas to separate IPs and not to spaces.
7. Click **Save**, then select **Close**.

As a final step, reboot the machine or Network Manager from Terminal:

```
sudo service network-manager restart
```

## Issue 4: There is no Network Manager

Let's say you have removed **Network Manager** or accidentally uninstalled it. Here's a really tricky situation: You don't have the Internet and no Network Manager.

Assuming the apt package is still in cache, then you can go to Terminal and type:

```
sudo apt-get install network-manager
```

If you've cleared this cache, you can use an Ethernet cable to connect by plugging it into the Ethernet port and running the command again.

As a final step, if none of the above works, you will need to edit your configuration file. We have chosen **gedit** as a text editor, but you can use your preferred option and modify the command.

```
sudo gedit /etc/network/interfaces
```

Modify it to read as follows:

```
auto lo iface lo inet loopback auto wlan0 iface wlan0 inet dhcp wpa-ssid myssid
```

Then you can restart the interface by entering the code below:

```
sudo ifdown wlan0 && sudo ifup -v wlan0
```

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